TOBACCO INDUSTRY RESEARCH COMMITTEE 94
350 FIFTH AVENUE NEW YORK 1, N. Y.

Naive

Application For Research Grant

Date: May 13, 1955

1. Name of Investigator: John M. Patterson, Assistant Professor) Co-directors and
Walter T. Smith, Associate Professor) principal investigators

2. Title:

3. Institution & Address: Kentucky Research Foundation
for:
Department of Chemistry
University of Kentucky
Lexington, Kentucky

4. Project or Subject: Fundamental Approaches to the Evaluation of Tobacco in Regard to Quality and Physiological Properties.

1003541669

5. Detailed Plan of Procedure (Use reverse side if additional space is needed)

I. Investigation of the Non-alkaloid Fractions of Tobacco.

In addition to the alkaloids, the following types of compounds have been found in tobacco: protein, reducing sugars, reducing substances other than sugars, sucrose, dextrin, pectic substances, pentosans, cellulose, lignin, polyphenols, tannins, resins, and waxes. Certain classes of these compounds will be investigated with respect to their carcinogenic activity. In such a study the resins might be a particularly fruitful field since compounds of somewhat related structure are known to be carcinogenic. The role of terpenes in tobacco will also be investigated. It is anticipated that these studies will be carried out on genetically controlled strains of tobacco which will be made available to us by the Kentucky Agricultural Experiment Station.

II. An Investigation of the Alkaloid Fractions:

This would be divided into two parts. (1) A study of the ratio of the different alkaloids in various strains, and a correlation of the ratio with the quality and physiological properties of the tobacco. (2) A search for unreported alkaloids in new strains of tobacco. The formation of new alkaloids may have a pronounced effect on the quality of the tobacco. It is anticipated that these studies will be carried out on genetically controlled strains of tobacco which will be made available to us by the Kentucky Agricultural Experiment Station.

Source: https://www.industrydocuments.ucsf.edu/docs/gmvh0000

III. Pyrolysis of Known Pure Compounds Found in Tobacco.

This project is concerned with the pyrolytic behavior of pure compounds, particularly at the temperature of a burning cigarette. The pyrolysis would be studied in an inert atmosphere and also in an atmosphere containing varying amounts of oxygen and moisture. The products of pyrolysis would be examined for the presence of physiologically active substances, particularly those compounds which influence the cardiovascular system and uncontrolled cell growth.

The use of varying amounts of oxygen and moisture is of significance because the nature of the pyrolysis products might be fundamentally changed when the amount of these substances is varied. Thus this might point the way to the elimination of possible harmful substances in tobacco smoke simply by a slight change in the conditions under which the tobacco is smoked.

This approach is unique in that pure compounds or known mixtures of pure compounds are subjected to conditions similar to that in burnigg tobacco. This represents a fundamental approach to the problem and permits a study of the interaction of the various components of burning tobacco.

This project will also be extended to include the pyrolysis of simple, model compounds of the naturally occurring substances.

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Source: http://www.industrydocumentslibrary.ucsf.edu/tobacco/

6. Budget Plan:

Salaries	$11,516.00
Expendable Supplies	1,500.00
Permanent Equipment	12,255.00
Overhead	5,412.52
Other	200.00
Total	$30,883.52

7. Anticipated Duration of Work: The above budget is for the first year. The projects outlined above should be approaching completion in about three years. For estimated budget after first year, see Exhibit A.

8. Facilities and Staff Available: The facilities of the Department of Chemistry, including ordinary chemicals, equipment, and special instruments, are available for this work.

The research assistants to be employed for these projects will be qualified graduate students working toward advanced degrees.

9. Additional Requirements:

1. Baird Infrared Spectrophotometer

2. Pyrometer Controller
(see detailed budget page.)

10. Additional Information (Including relation of work to other projects and other sources of supply):

A project involving pyrolytic studies, and directed by one of us, is durrently in progress. The experience derived will be valuable in pursuance of the proposals outlined above.

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Signature /s/ John M. Patterson
/s/ Walter T. Smith, Jr.
Director of Project

/s/ Merl Baker
Business Officer of the Institution

Director, Kentucky Research Foundation

Source: https://www.industrydocuments.ucsf.edu/docs/gnvm0000

Exhibit A

Detailed Budget for One Year

Personnel		
Professional:		
John M. Patterson) Directors and	$	900.00
W. T. Smith, Jr.) Principal Investigators		900.00
The directors will be released from regular duties during the regular school year to an extent sufficient to allow time for the proposed research.		
Research Assistants		
Project I (1 assistant)		1,800.00
Project II (2 assistants)		3,600.00
Project III (3 assistants)		5,400.00
Social Security for above salaries		216.00
Non-professional:		
Student labor		
500 hours at $1.00 per hour		500.00
Sub-total		$11,516.00
Instruments and Permanent Equipment		
Baird Infrared Spectrophotometer		12,000.00*
All of these projects involve elucidation of structures and identification of organic compounds. The spectrophotometer would be a highly valuable, if not necessary, tool for the accomplishment of this purpose. (* This represents the f.o.b. price. The Department of Chemistry will absorb transportation costs and other costs incidental to putting the apparatus into operation.)		
Pyrometer Controller		255.00
Sub-total		$12,255.00
Materials and Expendable Supplies		
Special Chemicals and Elemental Analyses		1,500.00
Travel and Communication		200.00
Overhead		5,412.52
Total		$30,883.52

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Note: The budget for succeeding years would not include the item for Instruments and Permanent Equipment and would amount to $18,628.52.

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Source: https://www.industrydocuments.ucsf.edu/docs/gjmm0000